

Applicant : Zhimin Liu, Mark S. Wang, and Jingyu Xu      Attorney's Docket No.: 13854-032001 / OPLINK-0106  
Serial No. : 09 899,481  
Filed : July 5, 2001  
Page : 2

In the specification:

Please amend the paragraph beginning at page 10, line 9 as follows:

B1  
If the Faraday rotator is latched and outside magnetic field is applied, the circulator can switch the route of signal transmissions from a port sequence of 1-2-3-4-1 to ~~4-1-2-3-4~~ 4-3-2-1-4. Latched Faraday rotator is bi-stable element corresponding to directions of magnetic field. If the rotator works as described above prefer embodiment, the route is 1-2-3-4-1, if the magnetic field becomes opposite direction (since the rotator is latched, only a pulse is required), the Faraday rotator rotates SOP in opposite direction, the route becomes ~~4-1-2-3-4~~ 4-3-2-1-4. This function can be realized by placing additional electrically controlled half wave plate such as TN liquid crystal, or LC wave plate, or Electro-optic plate before or behind each Faraday rotator in the standard loop circulator. The electrically controlled half wave plate changes SOP by 90 degrees so that the optical path will change according to rotated SOP to generate new route. Additionally, by introducing in mechanically controlled rhomb prism or DOVE prism into optical path, the route could be switched to be 3-2-1-4-3, 1-4-3-2-1, or 3-4-1-2-3. The rhomb prism or DOVE prism exchanges positions of light beam as shown in Figure 4, so that changes the route in circulators.